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Ledamöter den 1 Jan. 1954

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Literature on Palynology. XVII

By

G. Erdtman

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This seventeenth issue of 'Literature on Palynology' contains the titles of new papers which came to the compiler's notice in 1953. In conformity with the previous issues it also contains the titles of a number of older papers. Helpful data have been received from O. Dahlgren, Uppsala, O. Durham, North Chicago, F. Firbas, Göttingen, H. Gams, Innsbruck, H. Gross, Bamberg, R. Sandegren, Stockholm, H. Straka, Kiel, M. Tsukada and J. Ueno, Osaka, and others.

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Authors are requested to send reprints of their papers as soon as possible to the C. E. D. P. as well as to the Editor of Grana Palynologica.

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Description of some structures, possibly fossils, in Jotnian sandstone from Mångsbodarna in Dalecarlia

By

RAGNAR LANNERBRO

Mångsbodarna (out-lying grazing-ground belonging to Evertsberg) is situated in the south-west corner of the parish of Älvdalen. The Jotnian sandstone is here bare (425 m a. s.-l) and has, since the beginning of this century, been quarried for different purposes as for decoration of buildings, sepulchral monuments etc.

In 1944 I found here some boulders of sandstone which attracted my interest, because the bedding planes partly contained slightly conical cores of stone, Fig. 1., partly more irregular structures, Fig. 2.

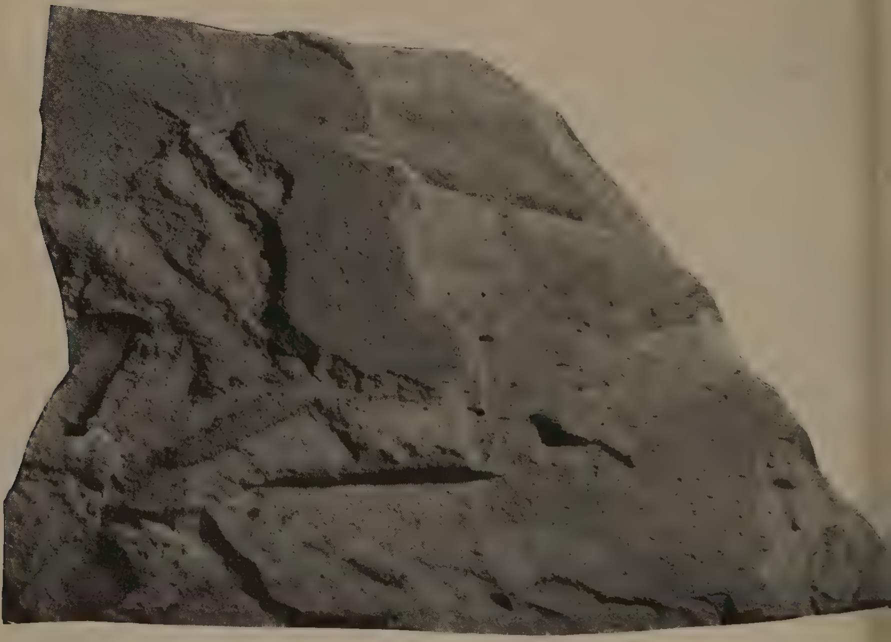

Fig. 1. Some conical structures in Jotnian sandstone. Scale 1 : 4

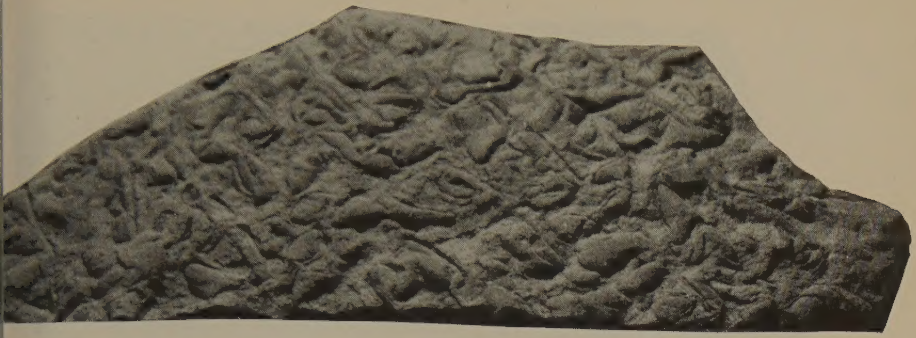

Fig. 2. Some structures on a bedding plane in Jotnian sandstone. Scale 1 : 4

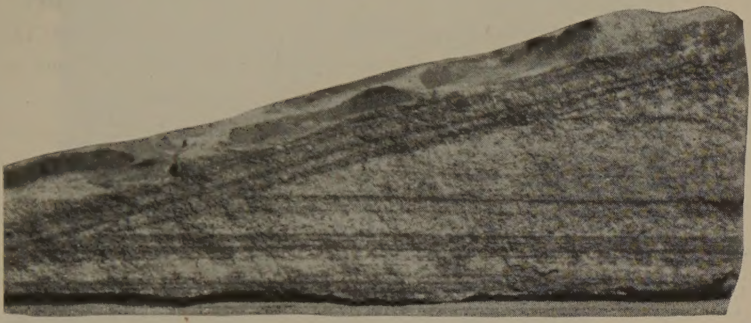

Fig. 3. Bedding plane with Jotnian »fossils» lying discordantly to a cross-bedding zone. Scale 1 : 4

In Mora[1] I have designated these mysterious structures as pseudofossils. But as there are some conical cores of stone which assign indication to a certain segmentation, I did not exclude the possibility that the pseudofossils could be remnants or impressions of organisms from the Jotnian period.

The Jotnian sandstone at Mångsbodarna is, for the most part, decidedly stratified in red and light-coloured bands. Some of these bands, however, contain very thin layers of red and grey clay. In the Eklund quarry the sandstone dips 12° towards the west. A breccia of two metres in breadth also stretches in the west, and the tectonic fissures of the breccia are filled out with white calcite, a few centimetres in thickness. The »fossil»-bearing bed lies at the depth of four metres and only within a very narrow zone. Thin beds of about the

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[1] In my geological description of the parish of Mora.

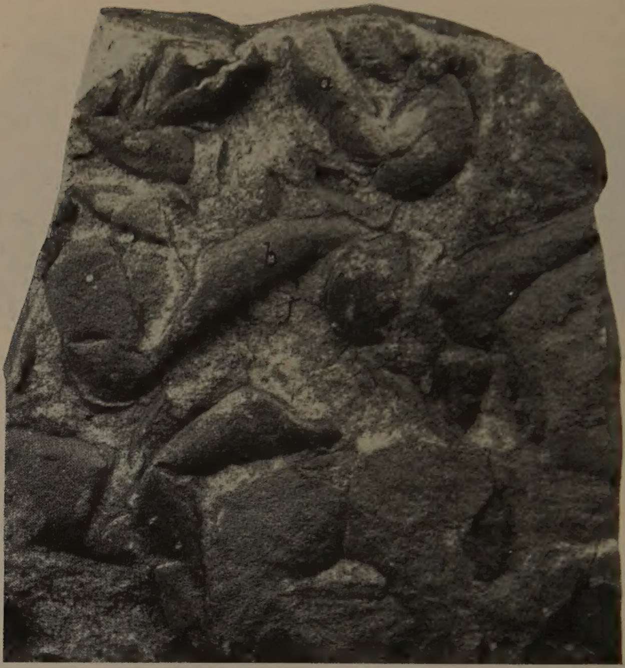

Fig. 4. Club-shaped types in Jotnian sandstone. Scale 1 : 3

same level contain a lot of such littoral formations as mud cracks, ripple marks and cross-bedding zones. Asymmetric profiles of current-formed ripple marks and mud cracks lie above the four-metre level, whilst symmetric profiles of oscillation ripple marks lie below this level. Also at the depth of two and a half metres there is a very thin »fossil»-bearing zone. These circumstances indicate that the Jotnian sea had its shore line not far from Mångsbodarna.

One of the »fossil-bearing» beds has a thickness of 3—5 cm and is situated on a cross-bedding zone. Fig. 3. The »fossils» are mostly parallel with the bedding plane, but there are also those which are perpendicular to it.

Many different types can be discerned. There are in all four more regular types. As mentioned above, some have a slightly conical shape. The length of these varies, but is mostly of about 8—10 cm. The length of one conical specimen, however, is no less than 18 cm, and its cross-section is, in its coarser end, 2,4 — in its thinner end only 1,6 cm.

On the other hand other forms have a cylindric part which in both ends passes into a club-shaped part, Fig. 4 a, b. The cylindric part

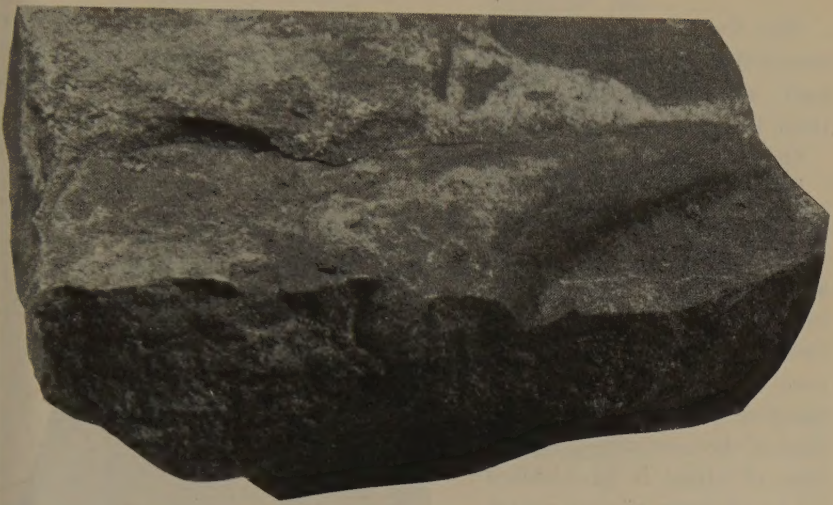

Fig. 5. Star-shaped type in Jotnian sandstone. Scale 1 : 3

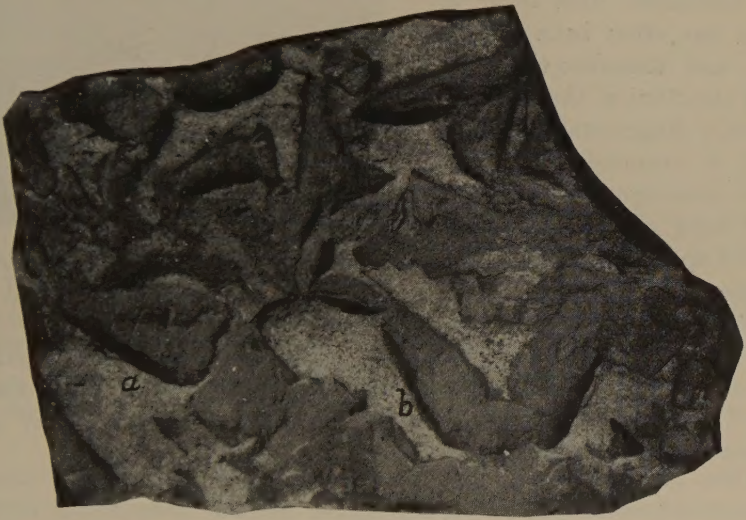

Fig. 6. Impressions of a three-parted form (a, b) in Jotnian sandstone. Scale 1 : 4

s about 8 cm, the club-shaped part is about 6 cm, and it is 3 cm in readth.

Even star-shaped types exist, Fig. 5. They are asymmetric, represent-
ng a three-tagged star. The salient part is about 8—10 cm and has a onical shape.

The fourth type represents, as shown by Fig. 6, a three-parted concavity with a not segmented front part, a well segmented central part, and a back part. The back part is sometimes incurvated. The total length of these forms is 15—20 cm.

Other possible "fossils" have a more or less irregular shape, Fig. 2.

The fossil-bearing bedding planes are usually covered with partly occurring red and grey thin beds of clay in which the "fossils" are imbedded. The internal structure of the petrifications is macroscopically identical with that of the sandstone, but the core of stone is surrounded by a red layer of clay, which is a few tenths of a millimetre in thickness. This layer of clay has often been broken up, and therefore the exterior structure of the "fossils" is only fragmental and difficult to examine.

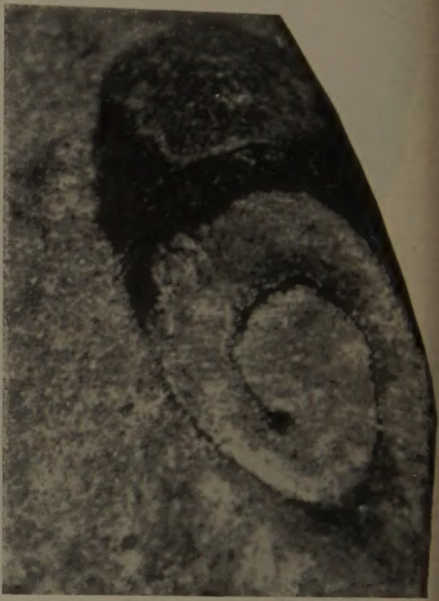

Fig. 7. A specimen in which a thin red layer of clay is spirally rolled up. Scale 2 : 1

In some specimens the thin red layer of clay is spirally rolled up in the sandstone like a shrunken leaf, Fig. 7.

Professor Troedsson, having examined analogous materials from the south part of Malung (about 80 km from Mångsbodarna), has kindly informed me that he is of the opinion that the thin layer of clay is kept together by an organic stuff (presumably a colony of bacteria).

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